



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1966

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

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The **6 December 2001** meeting of the SBMS will have a talk on "Practical Radio Astronomy at Microwave Frequencies" by John Hoot. He is going to talk about microwave radio astronomy. He is a well-known astronomer and one of the few who is active both in visual spectrum astronomy and in radio spectrum astronomy. His main page is at: <http://www.sscorp.com/observatory/>. His radio astronomy page is at: <http://24.5.47.244/observatory/hvrt/hvrt.html>. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

Prez Sez- "Lots going on this month. After the distribution of the 3.4 GHz amplifiers it will be interesting to see what members have come up with to go with them. Be sure to bring things to share at the meeting.

The 24 GHz project with the Pcom "land mines" is going along at a fast pace. Thanks to Sam, K6VLM and Dave, WA6CGR the technical details of the conversion are being carried out. It looks like all units will only take simple modifications in order to work successfully. Dave is putting together kits of parts and instructions. The IF is 432 MHz. More later in the newsletter. A big thanks to both Dave and Sam for the efforts. We hope to have

member's shops/labs open for activity nights to get people together to help each other work on the modules as well as a chance to socialize. We will talk more at the meeting.

Speaking of socializing: we are planning a CHRISTMAS PARTY at Dave, WA6CGR's house, 23437 E. Amberwick Pl Diamond Bar, CA 909.861.7036. He and his wife have invited us and a guest (wife, kid etc) to come to their house on Dec. 9 for a potluck get together. Bring either a main dish, side dish or dessert to share. Email, call or talk to me for an RSVP and which you should bring. (562-424-3737 or dmiller@moonlink.net) A chance to visit, see and hear Dave's new piano, and see his shop, and eat.

This month's speaker is John Hoot. He is a fellow ham and well-known amateur astronomer. He owns a software development company in San Clemente and has done considerable work on the development of a radio telescope site. He has several dishes on different frequencies as well as extensive software to reduce the data and do logging. It should be fascinating to hear about what he has done in astronomy and to learn how he has solved some of the same technical problems we have faced in working with microwaves, dishes and reception. Be sure and be there. Say, with the holidays coming on and the possibility of getting your 24

GHz converter working quickly, it looks like a perfect opportunity to ask Santa for a new multi mode 432 MHz transceiver! (Read FT 817) Santa came early at K6JEY but brought an FT 790mkII. Should work nicely I'll let you know if I should have waited.

If you are bringing things to the meeting or moving heavy objects, remember not to scoot them across the floor of the Legion Hall. The floor is easy to scratch and they are fussy about it. Thanks to Dick K6HIJ for reminding us.

Have a great Christmas and Thanksgiving, keep your soldering iron ready and ask if you need help. See you at the meeting. Doug K6JEY

Last meeting had Frank, WB6CWN talk on Phase Locked Loops and their design. Frank covered the material using ARRL 2001 Handbook and several other books as reference. His simplified talk covered the basics of the loop and how it works without all the math. Frank is available to talk in the future using all the math to explain in detail how it works and the hardware considerations. Thanks Frank. Welcome to Chuck W7CS of Oracle AZ, a member who made his first SBMS meeting. Welcome to new members; Dennis Kidder WA6NIA of Long Beach; Richard Coyne, WW7D of Mission Viejo; John Klewer, N6AX of Placentia ;Joe Maynard, K6JMA and Donna Barker, W6DJB of Signal Hill. Welcome to visitors Yik Kwon of Huntington Beach and Chuck, W7VX of Redondo Beach. This meeting had 29 people in attendance due to Dave, WA6CGR having the order of 3 GHz amplifiers, some antennas, a number of P-Comm "land mine" units, which lots of people had placed. Hiro, KE6IDA talked about his version of 24 GHz narrowband rig using the CTR up/down converter modules. Sam, K6VLM talked about his modification of the P-Comm "land mine" unit to a 24 GHz narrowband transverter. Both Hiro and Sam had their hardware to show. Discussion of an activity day some time during the month to allow members to check out rigs and make contacts on other bands than 10 GHz and 24 GHz. It was decided to use the VHF and UHF contest weekends for all microwave bands. Discussion was made over the possible sponsor of Microwave Update in 2004 in conjunction with the San Diego Microwave Group. More planning to be made following contact with the San Diego group. Proposed SBMS collared tee shirts were discussed by Dick, WB6DNX. Now a logo design is to be worked up.

Scheduling.

3 January Chip N6CA: Dish Evaluation with a Laser Pointer

7 February-- 24 GHz status review. Presentation by various members on the status of their 24 GHz stations. Frequency and power measurement test set-ups will be available for member's radios.

Banquet at the Guasti Cafe. With white elephant exchange and door prizes! (And good food)

7 March-- Noise Figure seminar- review of techniques with testing available through 24 GHz.

Wants and Gots (for sale)

Want large tripod for a 4 ft dish. Mel, WA6JBD 909-369-6515

Want WR-90 waveguide switch and a large tripod. Chuck, W7CS 520-896-2891

Want P10 connections for HP-435A power sensor Dick K6HIJ 760-253-2477

Want (1) SMA t/r switch, (2) low noise 10 GHz preamp and (3) 1 watt 10 GHz PA Richard WW7D 949-855-4689

New 47 GHz Record Bill, W3IY, and Bernie, W4SW, announce the completion of a 174 km contact on 47 GHz today, 14 November 2001. This is believed to be a new North American distance record on this band. The contact was completed at 3:28 PM EST (2028 Z) between W3IY at Shippensburg, PA, FN10ff and W4SW at Hogback Mtn., FM08us on the Skyline Drive in VA. The W3IY signal was 559, and the W4SW signal was 529. Rigs at each end were essentially the same, and consisted of keyed 12 GHz oscillators followed by two doublers for an output power of 30 mW at W4SW, and over 20 mW at W3IY. The receivers were mixers using 12 GHz LOs x 4 in frequency. Antennas were 25 cm dishes. The event was witnessed and videotaped at the W3IY end by John, W3HMS. The path was first checked on 10 GHz between W3HMS and W4SW, and needle pinning signals were achieved, making dish peaking impossible. On a 24 GHz contact between W3IY and W4SW, the dishes could actually be peaked, with signals well above S9 at both ends. Thanks go to Brian, WA1ZMS, for providing information on the source of humidity forecasts, important because of the effect of atmospheric moisture in attenuating signals above 20 GHz. Dry weather (dew point of 32 F) also helped. Bernie also thanks Bill for his extensive help with some of the mechanical fabrication of his rig. From: "Bernhard E. Keiser" <bkeiser@cox.rr.com>

ARRL Bulletin 48 ARLB048 From ARRL Headquarters Newington CT November 15, 2001

ARLB048 FCC Announces Mail Changes for Gettysburg Office

The FCC's Gettysburg, Pennsylvania, office has moved its mailroom offsite. Effective immediately, all overnight couriers—including FedEx and UPS—require the "ship to" address for the FCC Gettysburg

office to be Rear entrance, 35 York St, Gettysburg, PA 17325. The FCC said it's trying to balance accessibility with the need for heightened security and encouraged its customers to make full use of

the Commission's electronic filing systems. The Gettysburg office is where Amateur Radio applications are processed and licenses issued by the Wireless Telecommunications Bureau. It's also where Special

Counsel for Amateur Radio Enforcement Riley Hollingsworth has his office.

The change does not affect US Postal Service deliveries. The FCC said the USPS will continue to accept and will divert all mail addressed to 1270 Fairfield Road, Gettysburg—the office's physical location—to the off-site mailroom. Until November 30, the FCC itself will divert overnight courier deliveries to 1270 Fairfield Road to the new off-site mailroom. "This new off-site mailroom facility does not affect applications or any other filings requiring a fee," an FCC Public Notice said. Unless paid on-line using a credit card, amateur vanity call sign fees go to the FCC's contractor in Pittsburgh. Requests for amateur

fee refunds, however, are sent to Gettysburg. The FCC also said the staff at the Gettysburg filing counter at 35 York Street will not accept hand-delivered documents enclosed in envelopes. The filing counter is open weekdays 8 AM until 4:30 PM. Originals and copies of each official filing must continue to be addressed to the Commission and held together with rubber bands or fasteners. "Stamp and return" copies will be provided as long as they clearly accompany each individual filing. Filings requesting confidential treatment under the Commission's rules must also be filed without envelopes. The staff at the filing counter will enclose such filings

in an FCC envelope labeled "confidential." Questions concerning the FCC Public Notice should be directed to the Building and Facility Management Specialist, rhewitt@fcc.gov or

717-338-2535.

73's Bill



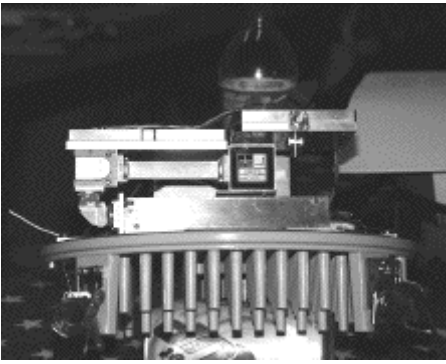
Frank, WB6CWN during his talk on Phase Locked Loops at the November SBMS meeting. Note the residuals of the P-comm hardware and 3 GHz amplifiers to the left of Frank. I'm sure Dave's pile went to zero quickly following the meeting. Photo- by K6RRA.



Another of Kurt's photographs taken during the November meeting where Frank, WB6CWN talked on PPL's. There was a nice turn out for the meeting at the Corona American Legion Hall.



Here is Dave, WA6CGR hard at work sorting our member's orders of 3 GHz amplifiers, antennas, and 22 GHz P-comm units. Thanks to Dave, new hardware is available for modification to the amateur microwave bands. As indicated in Doug's Pres Sez, Dave and Sam, K6VLM are working to document the mods of the 22 GHz P-comm units into the 24 GHz band for SSB operation.



Here is a side view of the modification of the P-comm unit. Most of the circuit boards are removed and the RF parts relocated off the diplexer. The WR-42 waveguide diplexer has been modified with a 90-degree elbow on one end and one section of the filter retuned to 24 GHz. The diplexer remains as a transition to the circular waveguide plug and socket arrangement which allows the "land mine" equipment to snap on to the back of the P-comm dish. As shown Sam used a circulator to accomplish the T/R function. The original mixers are mounted on the circulator and a connecting piece of waveguide.



There was lots of discussion at the November SBMS meeting. Here Dick, K6HIJ; Dick, WB6DNX and Chuck, WA6EXV talk about recent happenings. Photograph by Kurt K6RRA.

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast. Dues are \$15 per year, which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgecrest.ca.us, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

San Bernardino Microwave Society newsletter

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